

# THE PERFORMANCE LEADER IN MICROWAVE CONNECTORS



## 1.85 mm (V) DC TO 67 GHz CONNECTORS



- Low VSWR
- Low Insertion Loss
- Low RF Leakage
- High Temperature
- Rugged & Durable
- Excellent Repeatability

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1.85 mm (V) DC to 67 GHz connectors from Southwest Microwave include field-replaceable 2- and 4-hole Flange-mount and standard or metric Thread-in Connectors, Direct-solder Cable Connectors, clamp-on End Launch Connectors, and the new Solderless Vertical Launch Connector.

## SPECIFICATIONS

### Electrical:

- Mode Free Through 67 GHz
- Low VSWR: DC to 18.0 GHz ..... 1.10:1 max  
 18.0 to 40.0 GHz ..... 1.15:1 max  
 40.0 to 50.0 GHz ..... 1.18:1 max  
 50.0 to 67.0 GHz ..... 1.25:1 max
- Low RF Leakage  $\leq$  -100 dB
- Low Insertion Loss

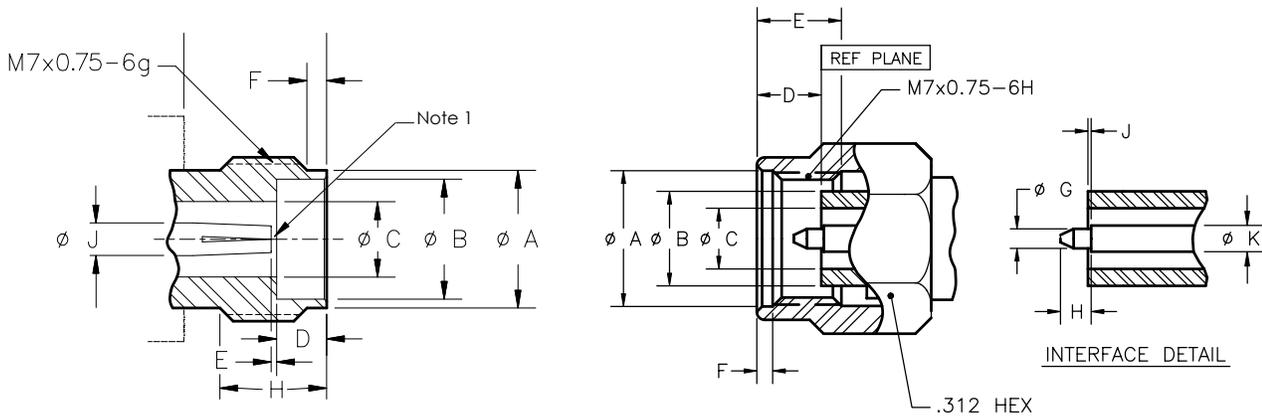
### Temperature:

- -55°C to + 165°C

### Materials / Construction:

- Materials and finishes vary by product type. For data, refer to website or request Product Drawings and Specifications for desired connector.

## INTERFACE STANDARDS



### 1.85mm JACK (SOCKET CONTACT)

LTR	INCHES (MILLIMETERS)			
	MINIMUM		MAXIMUM	
A	.228	(5.79mm)	.232	(5.89mm)
B	.1878	(4.770mm)	.1888	(4.796mm)
C	.0725	(1.841mm)	.0731	(1.857mm)
D	.118	(3.00mm)	.122	(3.10mm)
E	.000	(0.00mm)	.005	(0.13mm)
F	.055	(1.40mm)	.065	(1.65mm)
H	.189	(4.81mm)	.199	(5.06mm)
J	.0313	(0.795mm)	.0319	(0.810mm)

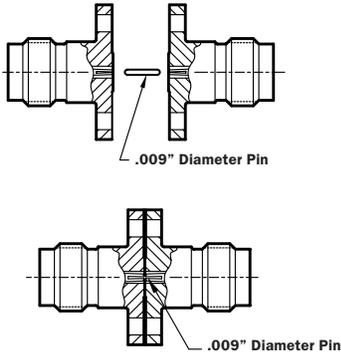
### 1.85mm PLUG (PIN CONTACT)

LTR	INCHES (MILLIMETERS)			
	MINIMUM		MAXIMUM	
A	.276	(7.01mm)	.280	(7.11mm)
B	.1865	(4.737mm)	.1872	(4.755mm)
C	.0725	(1.842mm)	.0730	(1.854mm)
D	.0729	(1.852mm)	.0965	(2.451mm)
E	.172	(4.37mm)	.182	(4.62mm)
F	.020	(0.51mm)	.030	(0.76mm)
G	.0196	(0.498mm)	.0203	(0.516mm)
H	.0525	(1.335mm)	.0569	(1.445mm)
J	.000	(0.00mm)	.005	(0.13mm)
K	.0311	(0.790mm)	.0320	(0.813mm)

Notes: 1. Meets VSWR when mated with .0196 / .0206 (0.498 mm / 0.523 mm) Diameter Pin. 2. Interface per IEC 169 Grade 1

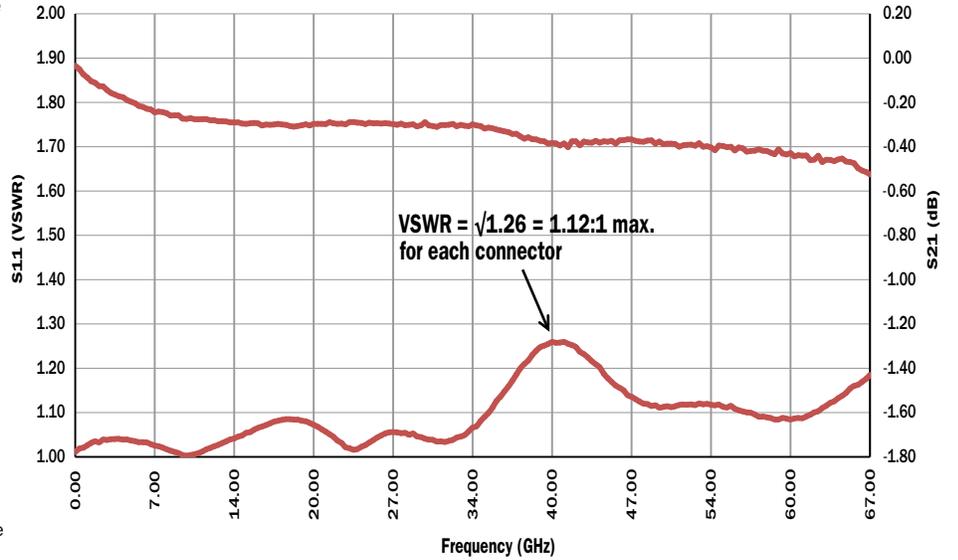
# TEST DATA

Data shown represents two 1.85 mm (V) 9 mil pin connectors tested back-to-back. To extract VSWR data for a single connector, take the square root of the VSWR data point and divide the insertion loss data point by two.

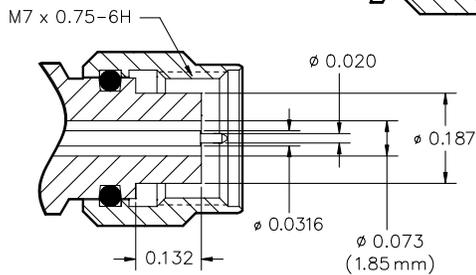
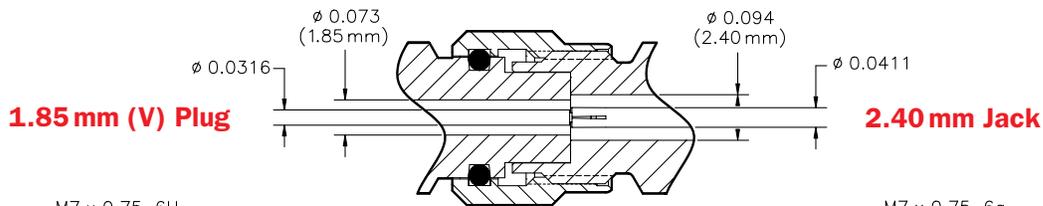


$VSWR = \sqrt{1.26} = 1.12:1$  maximum for each connector, as shown. Contact Southwest Microwave for performance specifications for 1.85mm and all other connectors.

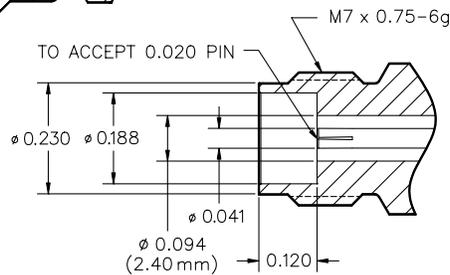
## 1812-02SF Back-to-Back Test Data



# INTERFACE COMPATIBILITY WITH 2.40 mm CONNECTORS



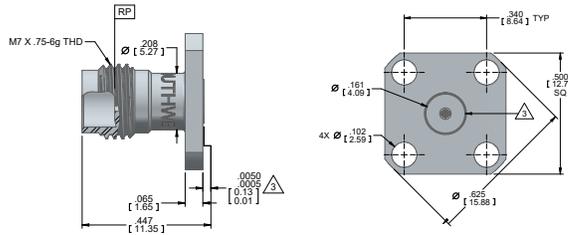
**1.85 mm Plug (Male) Connector**



**2.40 mm Jack (Female) Connector**

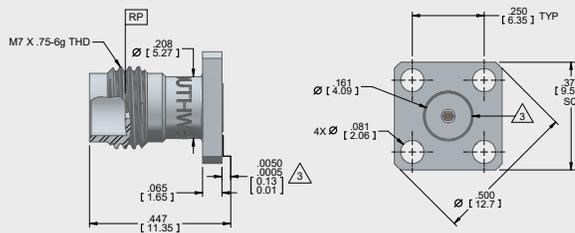
# JACK (FEMALE) CONNECTORS

**FLANGE JACK (FEMALE)**  
**4 HOLE .500 SQUARE**



ACCEPTS PIN DIA.	Connector No.
.012	1812-04SF
.009	1812-01SF

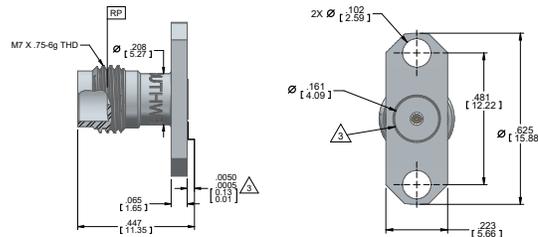
**FLANGE JACK (FEMALE)**  
**4 HOLE .375 SQUARE**



ACCEPTS PIN DIA.	Connector No.
.012	1812-05SF*
.009	1812-02SF*
.009	1812-09SF
.012	1812-10SF

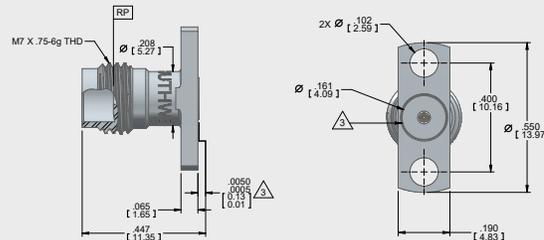
\* Connector also has .067 Flange Hole Size

**FLANGE JACK (FEMALE)**  
**2 HOLE .625 x .223**



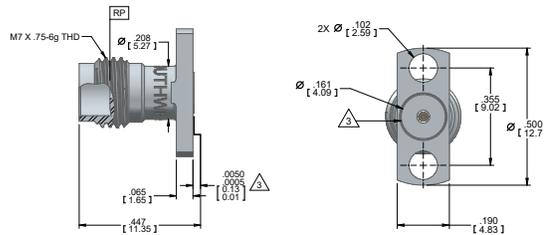
ACCEPTS PIN DIA.	Connector No.
.012	1814-04SF
.009	1814-01SF

**FLANGE JACK (FEMALE)**  
**2 HOLE .550 x .190**



ACCEPTS PIN DIA.	Connector No.
.012	1814-05SF
.009	1814-02SF

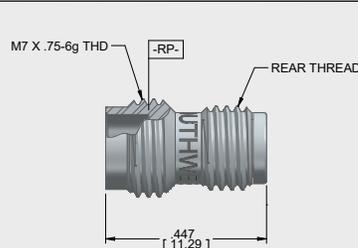
**FLANGE JACK (FEMALE)**  
**2 HOLE .500 x .190**



ACCEPTS PIN DIA.	Connector No.
.012	1814-06SF
.009	1814-03SF

**THREAD-IN JACK (FEMALE)**  
**STANDARD M6x .75 REAR THD**

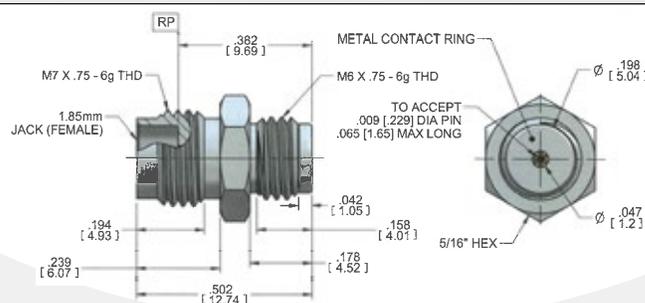
.012	1820-04SF
.009	1820-01SF



THREAD-IN JACK (FEMALE)	OPTIONAL .250-36 REAR THD
.012	1820-05SF
.009	1820-03SF

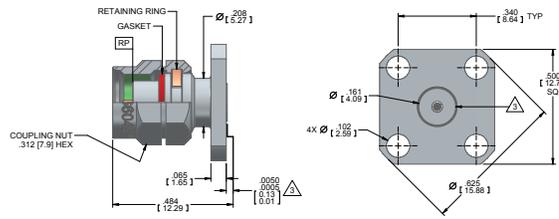
**THREAD-IN HEX (FEMALE)**  
**STANDARD M6x .75 REAR THD**

.009	1820-10SF
.009	1820-11SF



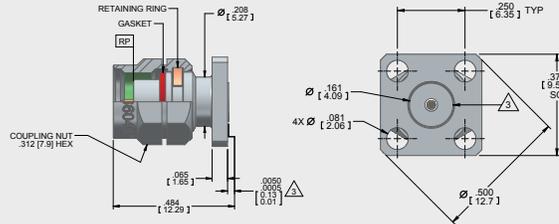
# PLUG (MALE) CONNECTORS

**FLANGE PLUG (MALE)**  
**4 HOLE .500 SQUARE**



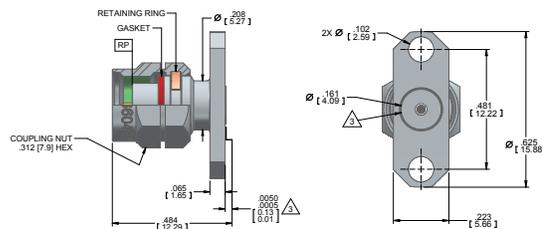
ACCEPTS PIN DIA.	Connector No.
.009	1811-01SF
.012	1811-04SF

**FLANGE PLUG (MALE)**  
**4 HOLE .375 SQUARE**



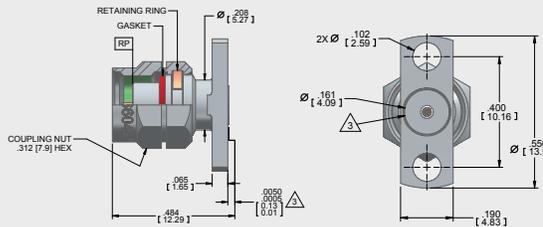
ACCEPTS PIN DIA.	Connector No.
.012	1811-05SF
.009	1811-02SF

**FLANGE PLUG (MALE)**  
**2 HOLE .625 x .223**



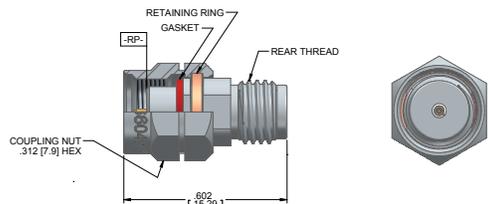
ACCEPTS PIN DIA.	Connector No.
.012	1813-04SF
.009	1813-01SF

**FLANGE PLUG (MALE)**  
**2 HOLE .550 x .190**



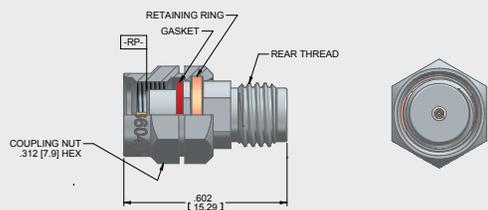
ACCEPTS PIN DIA.	Connector No.
.012	1813-05SF
.009	1813-02SF

**THREAD-IN PLUG (MALE)**  
**STANDARD M6x .75 REAR THD**



ACCEPTS PIN DIA.	Connector No.
.012	1821-04SF
.009	1821-01SF

**THREAD-IN PLUG (MALE)**  
**OPTIONAL .250-36 REAR THD**



ACCEPTS PIN DIA.	Connector No.
.012	1821-05SF
.009	1821-03SF

# ADAPTERS



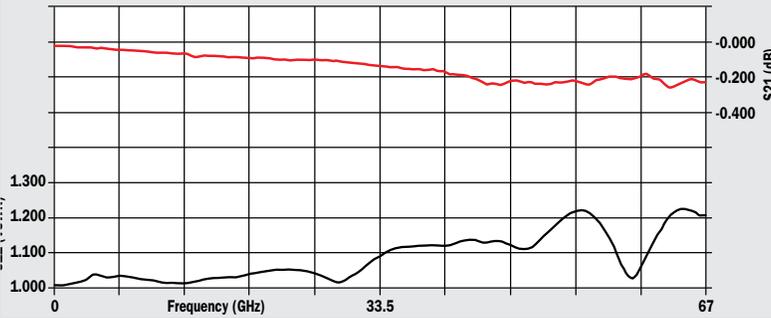
Low VSWR  
 DC to 18.0 GHz.....1.10:1 max  
 18.0 to 40.0 GHz.....1.15:1 max  
 40.0 to 50.0 GHz....1.18:1 max  
 50.0 to 67.0 GHz....1.25:1 max

Low Insertion Loss

RF Leakage: < -100dB

Temperature Rating:  
 -55°C to + 165°C

**1.85 mm to 1.85 mm Adapter (Model # 1832-00SF) Test Data**



**2.92 mm (K) to 1.85 mm (V) Adapters (40 GHz)**

2.92 mm (F) to 1.85 mm (F):	101810-00SF
2.92 mm (M) to 1.85 mm (F):	101820-00SF
2.92 mm (F) to 1.85 mm (M):	101830-00SF
2.92 mm (M) to 1.85 mm (M):	101840-00SF

**1.85 mm (V) to 1.0 mm (W) Adapters (67 GHz)**

1.85 mm (F) to 1.0 mm (F):	182410-00SF
1.85 mm (F) to 1.0 mm (M):	182420-00SF
1.85 mm (M) to 1.0 mm (F):	182430-00SF
1.85 mm (M) to 1.0 mm (M):	182440-00SF

**1.85 mm (V) to 0.9 mm SuperMini (67 GHz)**

1.85 mm (F) to 0.9 mm SuperMini (M):	185220-00G
1.85 mm (M) to 0.9 mm SuperMini (M):	185240-00G
1.85 mm (F) to 0.9 mm SuperMini (F):	185310-00G
1.85 mm (M) to 0.9 mm SuperMini (F):	185330-00G

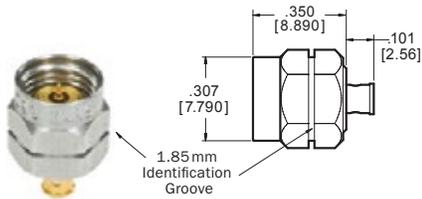
**1.85 mm (V) to SSBP Coax Contacts (67 GHz)**

1.85 mm (F) to SSBP Coax Contacts (F):	185020-00G
1.85 mm (M) to SSBP Coax Contacts (F):	185030-01G

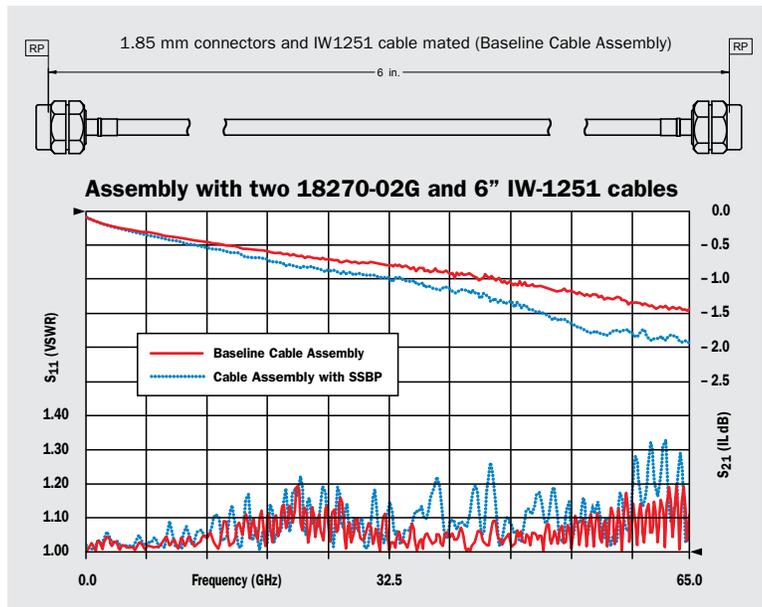
**1.85 mm (V) Adapters (67 GHz)**

1.85 mm (F) to 1.85 mm (M):	1830-00SF
1.85 mm (F) to 1.85 mm (M):	1830-02SF
1.85 mm (M) to 1.85 mm (M):	1831-00SF
1.85 mm (F) to 1.85 mm (F):	1832-00SF
1.85 mm (F) to 1.85 mm (F):	1832-02SF
1.85 mm (F) to 1.85 mm (F):	1832-02SF

# CABLE CONNECTORS



Detailed information on Direct Solder and on other Cable Connectors, including 0.9mm SuperMini and SSBP for use in multicontact D-Subminiature and MIL-DTL-38999 connectors, is available on the Southwest Microwave website.



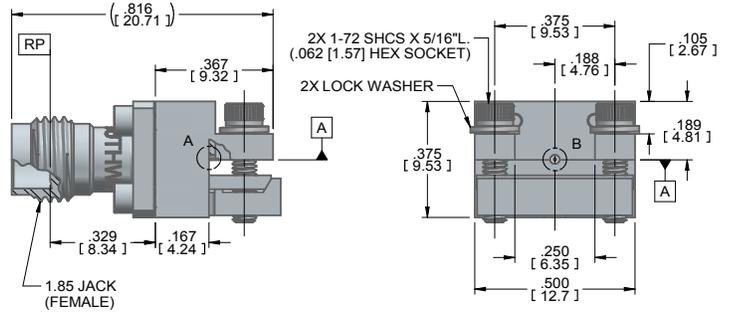
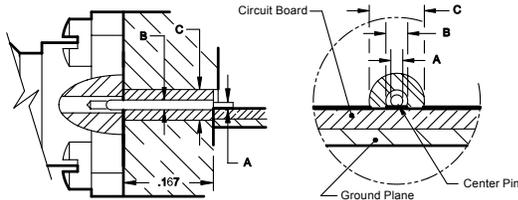
Cable Center Conductor Dia.	Cable	Field Replaceable	Cable Connector No.
.0113	.047Semi-Rigid	Direct Solder	1802-05SF (F)
.0113	.047	Direct Solder	18370-01G (F)
.0113	.047	Direct Solder	18270-01G (M)
.0253	.086 LL	Direct Solder	18270-03G (M)
.0113	.047	Direct Solder	18270-06Z (M)
	.086 LL	Direct Solder	18270-05G (M)
.0201	.086	Direct Solder	18270-02G (M)

# END LAUNCH CONNECTORS



Pin Diameter		Dielectric Dia.	Low Profile	
Dim A Board Pin	Dim B Internal		Female	Male
.007	.012	.0390	1892-03A-6	1893-03A-6
.005		.0390	1892-03A-7	1893-03A-7
.007		.0390	1892-03A-8	1893-03A-8
.005	.009	.0290	1892-04A-6	1893-04A-6
.007		.0290	1892-04A-7	1893-04A-7
.005		.0290	1892-04A-8	1893-04A-8

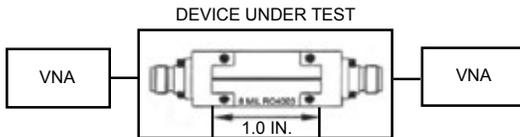
Pin Diameter		Dielectric Dia.	Narrow Block	
Dim A Board Pin	Dim B Internal		Female	Male
.005		.0290	1892-04A-9	
.005		.0290	1892-04A-14	



## Test Data, Microstrip

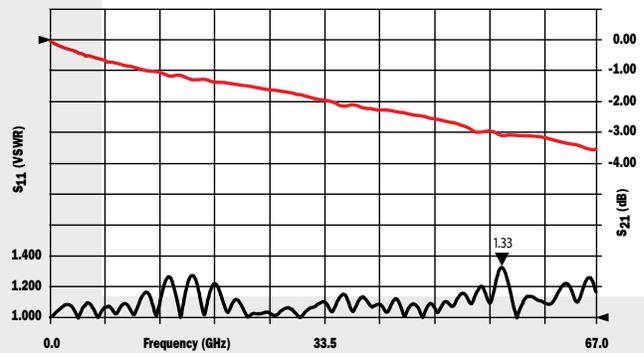
Showing test results to 67 GHz for two 1892-04A-5 End Launch Connectors on a RO4003 microstrip board with top ground launch. This shows both VSWR and Insertion Loss for the test board and the two connectors. This is not an optimized test board and is used to illustrate typical assembly.

Contact Southwest Microwave for suggested board-launch geometries based upon frequency and board material, for Grounded Coplanar/GCPWG and Microstrip applications.



Contact Southwest Microwave for Non-Magnetic models.

End Launch Connectors on a Microstrip Board (Connector No. 1892-04A-5)

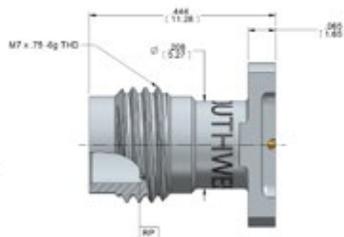


1.33 is the maximum for two 1892-04A-5 End Launch Connectors on a SMI microstrip test board using .008" Rogers R04003 microstrip board.

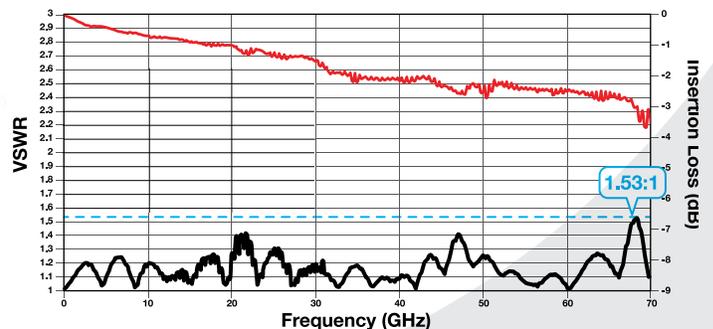
# VERTICAL LAUNCH CONNECTOR

## Compression-Mount, Solderless 1.85 mm (V) DC to 67 GHz (18359-001J)

VSWR of 1:25:1 max across 67 GHz bandwidth.  
Data represent two 1.85 mm connectors mounted on



## 1.85 mm (67 GHz) TEST DATA



2 0 1 9 - 2 0 2 0

# THE PERFORMANCE LEADER IN MICROWAVE CONNECTORS



## 1.85 mm (V) DC to 67.0 GHz Connectors

Since 1981, Southwest Microwave has been providing a broad range of high-performance microwave connectors and adapters, currently available from DC to 110 GHz, for hi-rel / space, defense, instrumentation, integrated-circuit and PCB evaluation applications. Built in the USA to rigorous performance and quality standards, Southwest Microwave interconnect solutions offers the industry's lowest VSWR, insertion loss and RF leakage.

